

B-2



## MEMORANDUM

Office of George F. Morrow, Director

**TO:** Blair King, City Manager  
**FROM:** George Morrow, Electric Utility Director  
**DATE:** August 10, 2007  
**SUBJECT:** Overview of EUD's Planned Westside Substation

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The Electric Utility Department's electric system distribution plans include the construction of a new substation for operation as early as 2010.

This new Westside Substation would be located at the southwest corner of Kettleman Lane and Westgate Drive. Land for the substation was purchased by the City in 2001.

In order to keep the project moving forward, EUD plans to request City Council approval in the near future to issue an RFP for preliminary engineering services and wall construction.

Attached is a PowerPoint presentation providing background on the proposed new substation for your information.

George F. Morrow  
Electric Utility Director



**Electric Utility Department**

# **Westside Substation**

**City Council Shirtsleeve Session  
August 14, 2007**

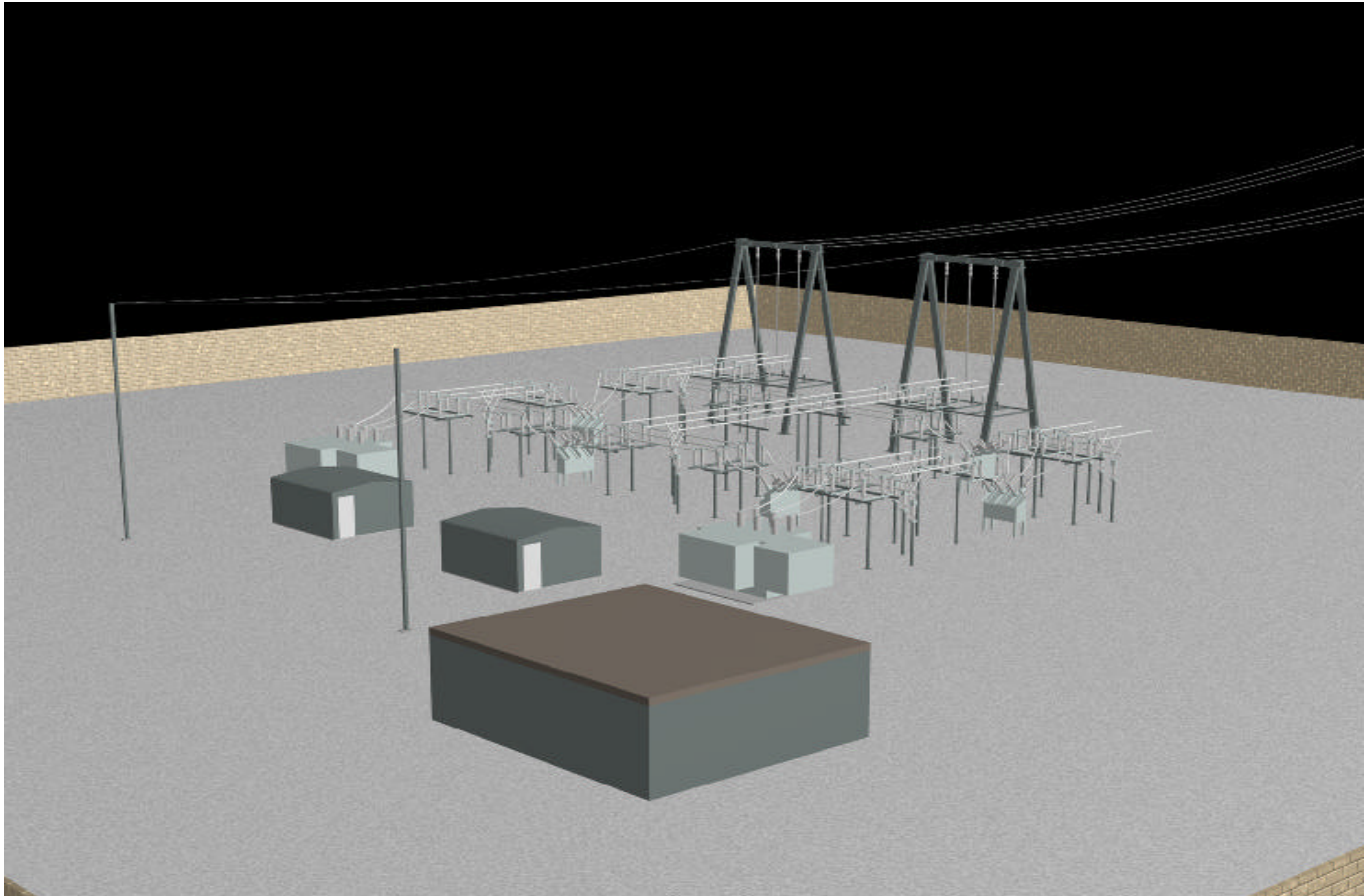


# SUBSTATIONS

- Substations facilitate the transfer of bulk electric power from generating sources to load centers.
- At load centers, power is then distributed to “end users” (homes, businesses, etc.)
- Substations also provide mechanism for routing power around system problems (e.g. storm damage, equipment malfunctions, load imbalances, etc.)



# Typical Substation Layout



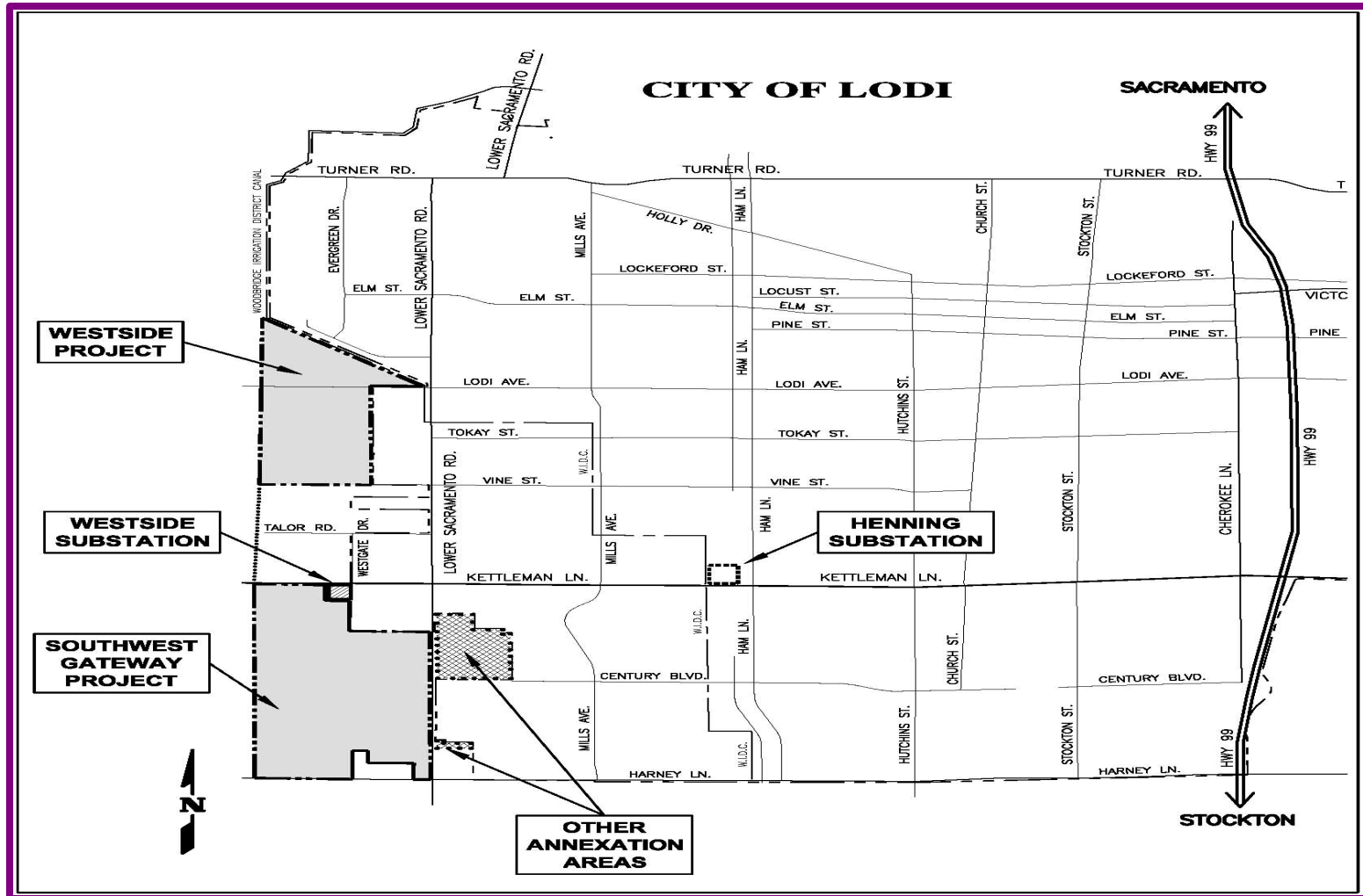


# Westside Substation Location

- Corner of Westgate Drive & HWY 12
  - At the southern side of HWY 12
  - And western side of Westgate Drive
- Approximately 325ft by 301ft
- Included in the City's Westside Facilities Master Plan dated January 26, 2001



# Site Map





# Property Details

- Portion (~4.10 Acres) of land under APN 058-030-01 owned by the Reichmuth
- Purchased by the City on August 12, 2003 for the Electric Substation Parcel
- Recorded by San Joaquin LAFCo on November 13, 2003
- APN 058-030-07 under the Van Ruiten & Zunino Annexation per Doc# 2003-263078
- 70% for EUD and ~30% for PW



# Overview

- Two-32MVA TR & a space for 3<sup>rd</sup> unit
- Design: Open construction or GIS
- Eight to twelve maximum 12kV feeders
- Five 60kV line interconnections
  - McLane to Westside Line (existing)
  - Henning to Westside Line (existing)
  - Industrial to Westside Line (in construction)
  - Double circuit NCPA to Westside Lines (under siting evaluation)







# Load Serving Capacity

- Maximum Substation Capacity = 64MVA
- Henning Substation non-coincidental peak load = 55.04MW (86% of capacity)
- New Electrical Loads (**Total = 22.68MW**):
  - Southwest Gateway Project = 6.61MW
  - WalMart Shopping Center = 3.70MW
  - Westside Project = 4.13MW
  - Other Annexation Projects = 1.2MW
  - Henning Load Transfer (keep <75% load) = 7.04MW



# Schedule

- Preliminary Engineering Phase = 6 mo.
- Block Wall Construction = 6 mo.
- Substation Final Design Phase = 18 mo.
- Environmental Study = 4 mo.
- Substation Construction = 12 mo.
- Westside Substation Development =  
**3 to 4 years**



# Tasks Completed

- Property survey of substation lot and 60kV steel poles south of Hwy 12
- Mounted 60kV steel poles north of Hwy 12
- Designed 12kV underground systems from the substation (north & south of HWY 12) to the annexation projects
- Laid out 12kV padmounted switches and vaults for the 600-amp main UG feeders



# Proposed RFP

- Soil resistivity test
- Preliminary ground grid design per Std. 80
- Ground potential rise (GPR) study
- Preparation of preliminary substation layout, design, criteria, and cost/benefit analysis
- Engineering & design perimeter block wall fence and landscape



# Summary

- New substation planned on westside of Lodi
- Previously acquired site is at Westside Road and Kettleman
- RFP for preliminary engineering tasks and wall construction planned in near future
- Projected in-service date of 2011